Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

    1.1. Name of the Data, data collection Project, or data-producing Program:
        2011 Anne Arundel County, MD, LiDAR Points

    1.2. Summary description of the data:
        LAS files of LiDAR data for the entire county of Anne Arundel located in the state of Maryland.

    1.3. Is this a one-time data collection, or an ongoing series of measurements?
        One-time data collection

    1.4. Actual or planned temporal coverage of the data:
        2011-03-01 to 2011-03-02

    1.5. Actual or planned geographic coverage of the data:
        W: -76.842309, E: -76.391286, N: 39.23855, S: 38.711028

    1.6. Type(s) of data:
        (e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
        point data

    1.7. Data collection method(s):
        (e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

    1.8. If data are from a NOAA Observing System of Record, indicate name of system:

        1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

    2.1. Name:
        NOAA Office for Coastal Management (NOAA/OCM)

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

NOAA Office for Coastal Management (NOAA/OCM)

2.4. E-mail address:

coastal.info@noaa.gov

2.5. Phone number:

(843) 740-1202

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

3.2. Title:

Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Process Steps:

- 2011-03-01 00:00:00 - Data Collection: Using a Leica Light Detection And Ranging (LiDAR) system, (1.4 meter ground sample distance) data were collected over the entire area of Anne Arundel County, MD (approx 416 square miles). Multiple returns were recorded for each laser pulse along with an intensity value for each return. The data acquisition occurred in 2 missions between March 1, 2011, and March 2, 2011. During the LIDAR campaign, a field crew conducted a GPS field survey to establish final coordinates of the ground base stations for final processing

of the base-remote GPS solutions.

- 2011-05-01 00:00:00 - Airborne GPS Processing: Airborne GPS data was differentially processed and integrated with the post processed IMU data to derive a Smoothed Best Estimate of Trajectory (SBET). The SBET was used to reduce the LiDAR slant range measurements to a raw reflective surface for each flight line. The overlap between flight lines was removed to provide a homogeneous coverage, and the coverage was classified to extract a bare earth digital elevation model (DEM) . Airborne GPS is differentially processed using the GrafNAV V7.50 software by Waypoint Consulting of Calgary, Alberta, Canada. The PDOP and distance separation is as follows: The classification and quality control (QC) of LiDAR data is carried out using TerraScan software by Terrasolid Limited of Helinski, Finland.

- 2011-05-01 00:00:00 - IMU data Processing: IMU data provides information concerning roll, pitch and yaw of collection platform during collection event. IMU information allows the pulse vector to be properly placed in 3D space allowing the distance from the aircraft reference point to be properly positioned on the elevation model surface. The IMU data is processed using the PosPac V4.2 software by Applanix Corporation of Richmond Hill, Ontario, Canada. The reflective surface is derived using the ALS Post Processor software by Leica Geosystems GIS & Mapping Division of Atlanta, Georgia.

- 2011-05-01 00:00:00 - LIDAR Point Classification The classification and quality control (QC) of LiDAR data is carried out using TerraScan software by Terrasolid Limited of Helinski, Finland.

- 2018-03-22 00:00:00 - Data were obtained from the Maryland iMap (imap.Maryland.gov) in LAZ format in October 2017. Data were in Maryland State Plane FIPS 1900 U.S. Survey Feet horizontally and vertical NAVD88 feet. The geoid model originally used to obtain NAVD88 was not listed in the metadata, but the files contained georeferencing information indicating that GEOID96 was used. While this was an unusual GEOID to use for 2011 data, there was no other information to the contrary.

   Data were reprojected to geographic coordinates in degrees. The vertical units were converted to meters and the GEOID96 model was reversed to get ellipsoidal heights. The data were then ingested into the Digital Coast Data Access Viewer for distribution.   Point classifications were not defined in the original metadata and many classes were found to have only a few points, likely residual temporary holding classes that were never cleaned up. Class 10 appeared to be ground points that could be used to form a breakline. These were reclassed to the ground class (2). Class 11 appeared to be overlap and were reclassed to the original ASPRS LAS 1.2 standard overlap class of 12. Points classified in what appeared to fit the standard ASPRS definitions (class 0 = created, never classified, class 1 = unclassified, 2 = ground, 7 = low noise, and 9 = water) were not changed. All other classes were reclassed to class 1, typically consisting of less than 100 points for the entire data set per class.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other

plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?
No

6.1.1. If metadata are non-existent or non-compliant, please explain:
Missing/invalid information:
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:
NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:
https://www.fisheries.noaa.gov/inport/item/52242

6.4. Process for producing and maintaining metadata
(describe or provide URL of description):
Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:
NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:
https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=8494
https://coast.noaa.gov/htdata/lidar2_z/geoid12b/data/8494

7.3. Data access methods or services offered:
Data is available online for custom downloads

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection
The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:
(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):
Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?
Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions
Line and Staff Offices may extend this template by inserting additional questions in this section.